

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION**

**SEMANTIC SEARCH TECHNOLOGIES
LLC,**

Plaintiff,

v.

YAHOO! INC., *et al.*,

Defendants.

Case No. 6:17-cv-00169-RWS

PATENT CASE

JURY TRIAL DEMANDED

**PLAINTIFF SEMANTIC SEARCH'S RESPONSE IN OPPOSITION
TO DEFENDANTS' RULE 12(b)(6) MOTIONS TO DISMISS**

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Plaintiff Semantic Search Technologies LLC (“Plaintiff” or “Semantic Search”) files this Response in Opposition to the Rule 12(b)(6) Motions to Dismiss filed in the above-captioned case by Defendants Yahoo! Inc., and SportsGiant LLC d/b/a HockeyGiant.com (“Yahoo,” “SportsGiant,” and together, the “Defendants”), and in support thereof shows the Court as follows:

INTRODUCTION AND SUMMARY OF ARGUMENT

Semantic Search, which is owned and controlled by the original inventors of the patents-in-suit and their longtime business partner, asserts three patents against Yahoo and four against SportsGiant.¹ All four patents-in-suit issued by the USPTO after the Supreme Court’s decision in *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347 (2014), and the latter two issued after the USPTO issued specific guidance on patent subject matter eligibility. For the Defendants to be correct and win their motions, the USPTO would have to have been wrong not once or twice, but multiple times in examinations under current controlling law, in issuing the patents-in-suit.

The claims of the patents-in-suit are generally improved methods of “computer-aided searches of large search spaces, such as the world wide web.” *See* Specification at 1:16-17.² Each claim contains at least 13 specific steps. A particular application of the methods of the patents-in-suit is in the e-commerce space, where “items” exist only as computer data records, and the methodology to efficiently and effectively map a potential buyer’s desires, which must be received by the computer in some comprehensible manner and may be expressed in a virtually infinite number of ways, to one or more potentially desired “items” (more specifically, the computer data records corresponding to such “items”), is extremely complex.

¹ The “patents-in-suit” are U.S. Patent Nos. 8,793, 237 (the “’237 Patent”), 8,880,497 (the “497 Patent”), 9,069,860 (the “’860 Patent”) and 9,378,521 (the “’521 Patent”). They are attached as Exhibits A, B, C and D, respectively, and they were also attached to Semantic Search’s original Complaint in this case.

² All references to the specification cite to the pages and lines of the ‘237 Patent.

The common specification of the patents-in-suit demonstrates that the patented methods improved upon prior art approaches and solved an open problem related to the accuracy and efficiency of textual, lexical, semantic searches within a computerized environment. Moreover, evidence that Semantic Search submits with this response further demonstrates that top companies and academic researchers recognized these problems, struggled with them, and came up with a myriad of proposed solutions, all of which differed from the methods of the patents-in-suit.

Through the facts alleged in its original Complaint, the additional evidence submitted herewith, and this brief, Semantic Search demonstrates that:

- (1) The common specification of the patents-in-suit discusses the prior art and state of affairs that existed as of the time of the inventions, and it discusses how the methods of the patents-in-suit were an improvement, were non-conventional at the time, and therefore that the methods of the patents-in-suit were inventive.
- (2) The methods of the patents-in-suit are computer-based and operate only on computer records in a particular format (*i.e.*, “category descriptions” and “entity descriptions”) and have literally ***no application*** outside the computer environment.
- (3) The methods of the patents-in-suit are a “solution [that] is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks” and are “directed to a specific implementation of a solution to a problem in the software arts.” *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014); *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1339 (Fed. Cir. 2016); *see also Motio, Inc. v. BSP Software LLC*, 154 F.Supp.3d 434, 439-41 (E.D. Tex. 2016) (Mazzant, J.).
- (4) The focus of the claims is on specific asserted improvements in computer capabilities, as opposed to taking a fundamental economic or business practice and saying, “do it on a computer.” *See Enfish*, 822 F.3d at 1335-36.
- (5) The District of Delaware Court held a computerized search patent, claiming a method less specific than any claim asserted by Semantic Search here, to be subject matter eligible. *Improved Search LLC v. AOL Inc.*, 170 F.Supp.3d 683 (D. Del. 2016).
- (6) Even the specification itself demonstrates that the methods of the patents-in-suit do not preempt the e-commerce space because there are prior art methods of search that are available, albeit inferior.

- (7) All four patents-in-suit issued from July 2014 through June 2016, after the United States Supreme Court's decision in *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347 (2014), and the last two issued after the USPTO issued specific post-*Alice* guidance regarding subject matter eligibility.
- (8) Additional evidence submitted by Semantic Search further demonstrates that top companies and academic researchers recognized existing problems with then-known and used methods of search and retrieval from a large search corpus – specifically in the area of e-commerce – struggled with those problems, and came up with a myriad of proposed solutions, all of which differed from the methods of the patents-in-suit. This evidence further demonstrates that the methods of the patents-in-suit were non-conventional at the time, that they were inventive, and that they do not preempt all methods of e-commerce or search and retrieval of computerized data records.
- (9) Additional limitations contained in dependent claims asserted by Semantic Search further illustrate the subject matter eligibility of each claim of the patents-in-suit.
- (10) The Defendants entirely failed to satisfy their burden to demonstrate that these presumptively-valid patents are invalid by clear and convincing evidence.

The claims of the patents-in-suit are not abstract, they contain inventive concepts, and they do not preempt the field of searching for and retrieving computerized data records. Rather, the inventions described in the claims of the patents-in-suit are technical, computerized solutions to problems that are particular to computer networks and the Internet.

All claims of the patents-in-suit are subject matter eligible, as the USPTO found multiple times under the current post-*Alice* legal standards. The Defendants' motions to dismiss should be denied.

PROCEDURAL AND FACTUAL BACKGROUND

A. Procedural Background

1. Semantic Search filed its original Complaint against the Defendants (and other defendants that are no longer in the case) on March 20, 2017, asserting that the Defendants infringe the patents-in-suit.

2. Each Defendant filed a Rule 12(b)(6) motion to dismiss Semantic Search’s original Complaint for Failure to State a Claim. (*See* Dkt. Nos. 52 and 55) Each of the Motions to Dismiss asserts that the patents-in-suit are subject matter ineligible under 35 U.S.C. § 101.³

3. In its Complaint, Semantic Search identified “at least” one claim from each of the patents-in-suit that each Defendant infringed and attached preliminary, exemplary, detailed claim charts for each patent-in-suit against each Defendant. (Complaint ¶¶ 28-30, 46-48, 64-66, 82, 86, 88, 90, 97-99, 105-107, 113-115, 121-123, and related exhibits) Semantic Search also specifically incorporated by reference its infringement contentions and claim charts that would be served later in the case under Local Patent Rule 3-1. (*Id.*)

4. In its infringement contentions served on Yahoo and SportsGiant, Semantic Search asserted the following claims:⁴

- ‘237 Patent – Claim 10 (against both Yahoo and SportsGiant)
- ‘497 Patent – Claims 1, 5, 7, 8 and 10 (Yahoo and SportsGiant)
- ‘860 Patent – Claims 1, 5, 7, 8 and 10 (Yahoo and SportsGiant)
- ‘521 Patent – Claims 1, 5, 7, 8 and 9 (SportsGiant only)

5. The Defendants’ motions to dismiss are substantively the same as those pending in an earlier-filed related case, *Semantic Search Technologies LLC v. Aldo U.S., Inc., et al.*, Case No. 6:16-cv-1058 (E.D. Tex.) (Schroeder, J.) (the “Aldo” case), as supplemented. (*See, e.g.*, Dkt. No. 17 in the *Aldo* case, and the supplemental proceedings as discussed below) In fact, much of the content of the Defendants’ motions was copied verbatim from the motions to dismiss filed in the *Aldo* case and the related supplemental briefing in that case.

³ Yahoo also asserts that the case should be dismissed for improper venue under Rule 12(b)(3). That part of Yahoo’s motion to dismiss is currently stayed. (*See* Dkt. No. 64)

⁴ In its infringement contentions, Semantic Search stated that, “At this time, Semantic Search is not asserting claims of indirect infringement against Yahoo, and it also is not asserting claims against Yahoo based on [the ‘521 Patent].”

6. This Court held an oral hearing on the motions to dismiss in the *Aldo* case on February 2, 2017. (See Dkt. No. 49 in the *Aldo* case) The Court later granted supplemental briefing with respect to dependent claims, which was completed on September 6, 2017. (See Dkt. Nos. 120, 125 and 126 in the *Aldo* case) On September 13, 2017, Semantic Search filed a motion for leave to supplement the record on the motions to dismiss with evidentiary material that is pertinent to the motions to dismiss and a brief explaining the importance and pertinence of the evidence.⁵ (See Dkt. Nos. 127 and 128 in the *Aldo* case) That motion for leave is pending.

7. On September 26, 2017, the Court stayed the *Aldo* case pending resolution of Semantic Search's motion for leave and the *Aldo* defendants' motions to dismiss. (See Dkt. No. 130 in the *Aldo* case) Similarly, the Court has stayed this case with respect to all issues other than the Motions to Dismiss, pending resolution of those Motions. (See Dkt. No. 64)

B. Facts Taken Directly From Semantic Search's Complaint and the Patents-in-Suit

8. Semantic Search is a Texas limited liability company with its principal office located in the Eastern District of Texas, at 5608 W. Plano Parkway, Suite 300, Plano, Texas 75093. (Complaint ¶ 3) Semantic Search is the owner of each of the patents-in-suit with sole rights to enforce the patents-in-suit and sue infringers. (Complaint ¶¶ 25, 43, 61, 79, 94, 102, 110, 118)

9. The members of Semantic Search are three corporate entities whose stock is held by the three original business partners who have been involved in the Semantic Search business

⁵ In this case, the evidentiary material that is the subject of the motion for leave in the *Aldo* case is being filed by Semantic Search along with this Response, and Semantic Search is also folding into this Response the arguments contained in its supplemental briefing in the *Aldo* case. In addition, in this case Semantic Search agreed to serve its P.R. 3-1 infringement contentions before the Defendants' extended deadline to file their motions to dismiss, even though Semantic Search was not required to do so and this is contrary to the ordinary sequence of events in an E.D. Tex. patent case. This allowed the Defendants to address all asserted independent and dependent claims in their motions, and thereby avoided the situation with piecemeal evidence and briefing that occurred in the *Aldo* case, which should ease the burden on the Court.

for many years. Two of these persons are the inventors of the patents-in-suit, Bruce Matesso and Richard Bridgeman. The patents-in-suit have not been transferred to a third party for purposes of litigation; rather, they are being asserted on behalf of the persons who made the inventions and have been involved in these inventions since they were conceived. (Complaint ¶ 4)

10. Each of the patents-in-suit emanates from the same patent family. The original application, U.S. patent application Ser. No. 11/213,145, was filed on August 25, 2005. This application in turn claims priority from U.S. Provisional Application 60/606,357, which was filed on August 31, 2004. The patents-in-suit share a common specification. Each of the patents-in-suit is titled “Computer-Aided Extraction of Semantics From Keywords to Confirm Match of Buyer Offers to Seller Bids.” (Complaint ¶ 18)

11. The common specification of the patents-in-suit describes the state of the prior art and its shortcomings, makes abundantly clear that these problems are particular to computer networks and the Internet, confirms that the claims of the patents-in-suit solve the previously-existing problems with computer searches through defined sequences of method steps⁶ such that implementation of the specific steps results in achieving a desired result, and further confirms that the claims are limited to a particular application – that is, matching buyer offers to seller bids (for example, items offered for sale). (See Complaint ¶¶ 19-22)

12. The ‘237 Patent issued on July 29, 2014. It is valid and enforceable, and it was duly issued in full compliance with Title 35 of the United States Code. The USPTO issued the ‘237 Patent after the Supreme Court’s decision in *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347 (2014). (Complaint ¶¶ 26-27, 95-96)

⁶ The ‘860 Patent also includes some system claims, but Semantic Search has not asserted any system claims against either Defendant at this time.

13. The ‘497 Patent issued on November 4, 2014. It is valid and enforceable, and it was duly issued in full compliance with Title 35 of the United States Code. The USPTO issued the ‘497 Patent after the Supreme Court’s decision in *Alice*. (Complaint ¶¶ 44-45, 103-104)

14. The ‘860 Patent issued on June 30, 2015. It is valid and enforceable, and it was duly issued in full compliance with Title 35 of the United States Code. The USPTO issued the ‘860 Patent after the Supreme Court’s decision in *Alice*, and after the USPTO issued its 2014 Interim Guidance on Patent Subject Matter Eligibility. (Complaint ¶¶ 62-63, 111-112)

15. The ‘521 Patent issued on June 28, 2016. It is valid and enforceable, and it was duly issued in full compliance with Title 35 of the United States Code. The USPTO issued the ‘521 Patent after the Supreme Court’s decision in *Alice*, and after the USPTO issued its 2014 Interim Guidance on Patent Subject Matter Eligibility, its July 2015 Update on Subject Matter Eligibility, and its May 2016 Subject Matter Eligibility Update. (Complaint ¶¶ 80-81, 119-120)

16. As the Court knows well now from the briefing and argument in the *Aldo* case, the claims of the patents-in-suit that are at issue in this case are generally improved methods of “computer-aided searches of large search spaces, such as the world wide web.” (*See* 1:16-17; *and see generally* the patents-in-suit) A particular application of the methods of the patents-in-suit is in the e-commerce space, where “items” exist only as computer data records, and the methodology to efficiently and effectively map a potential buyer’s desires, which must be received by the computer in some comprehensible manner and may be expressed in a virtually infinite number of ways, to one or more potentially desired “items” (more specifically, the computer data records corresponding to such “items”), is extremely complex. Each of the asserted claims begins by stating that it is a “computer-implemented” or “server-implemented” method, and each of the asserted claims contains at least 13 separate steps in its patented method. (*Id.*)

C. Additional Important and Pertinent Facts and Evidence

17. Research and Academic Reports and Papers – Semantic Search has attached and submits as evidence three research and/or academic papers and one commercial report:⁷

- Exhibit E – The “Silverman UPenn Paper” – Barry G. Silverman, et al., *A Markov Decision Processing Solution to Natural Language Querying of Online e-Commerce Catalogs: The EQUIsearch Agent* (February 2001) (labeled as SEMANTIC_DEFS-002015-39)
- Exhibit F – The “IBM Research Report” – Juhnyoung Lee, et al., *An Interactive Visual Interface for Online Product Catalogs*, IBM Research Report, RC22729 (W0302-090) (February 20, 2003) (labeled as SEMANTIC_DEFS-002092-2117)
- Exhibit G – The “GM-Lin Research Paper” – Raz Lin, et al., *Attaining Fast and Successful Searches in E-Commerce Environments*⁸ (labeled as SEMANTIC_DEFS-002118-32)
- Exhibit H – The “37signals Research Report” – *Evaluating 25 E-Commerce Search Engines*, 37signals Research Report (January 2003) (labeled as SEMANTIC_DEFS-002282-2326)

The Silverman UPenn Paper, the IBM Research Report, and the GM-Lin Research Paper illustrate that the e-commerce search-and-retrieval field was a problem prior to the inventions of the patents-in-suit, and that skilled artisans – including researchers from top universities and some of America’s largest companies – were working on and proposing many different and varied solutions (none of which were the methods of the patents-in-suit). There were many possible alternatives being proposed and implemented. In addition, the commercial 37signals Research Report shows that every single site of major e-retailers had problems prior to the inventions of the patents-in-suit and that there were and are many alternative ways to try to solve the problems.

⁷ These documents were produced by the defendants in the *Aldo* case as purported “prior art.”

⁸ The GM-Lin Research Paper does not bear a date on its face. The defendants in the *Aldo* case produced it as part of their P.R. 3-4(b) disclosures, so they must believe its date to be prior to August 2004. The latest reference identified in the endnotes to the GM-Lin Research Paper is June 2002.

18. Declaration of Richard Bridgeman – Mr. Bridgeman is a co-inventor on the patents-in-suit, and he is knowledgeable and well-qualified in the field of the patents-in-suit. *See* Bridgeman Declaration at ¶¶ 3-11 and Appendix A. His Declaration provides sworn testimony discussing (a) the state of the art at the time of the invention and how the invention was an improvement; (b) the inventive concepts of the patents-in-suit; and (c) the fact that the inventions of the patents-in-suit do not preempt the field of e-commerce. Part of Mr. Bridgeman’s declaration specifically analyzes some of the research and academic papers that are discussed above.

19. Claim construction positions taken by the defendants in the *Aldo* Case – one of the advancements of the patents-in-suit was the inventive methods’ particular use of “category descriptions” and “entity descriptions.” In the claim construction briefing in the *Aldo* case, the defendants admitted that “category descriptions” and “entity descriptions” must be computer records in a particular format, which further supports Semantic Search’s positions on the motions to dismiss. The Responsive Claim Construction Brief filed by the defendants in the *Aldo* case (Dkt. No. 117 in the *Aldo* case) is attached as Exhibit I.

20. U.S. Patent No. 9,639,878 – On May 2, 2017, the USPTO issued U.S. Patent No. 9,639,878. The ‘878 Patent is in the same family as the patents-in-suit, with the same inventors, the same title, and a common specification. The ‘878 Patent is attached as Exhibit J.

ARGUMENT AND AUTHORITIES

A. Legal Standards for Motions to Dismiss Under Rule 12(b)(6)

The legal standards for a Motion to Dismiss under Rule 12(b)(6) are well known to this Court. On a Rule 12(b)(6) Motion to Dismiss, the Court “accepts all well pleaded facts as true, viewing them in the light most favorable to the plaintiff.” *Guidry v. Am. Pub. Life Ins. Co.*, 512 F.3d 177, 180 (5th Cir. 2007). The Court must accept all factual allegations in the complaint as

true and draw all reasonable inferences in favor of the non-movant. *Erickson v. Pardus*, 551 U.S. 89, 93-94 (2007); *Bowlby v. City of Aberdeen*, 681 F.3d 215, 218 (5th Cir. 2012).

The Court may consider “the complaint, any documents attached to the complaint, and any documents attached to the motion to dismiss that are central to the claim and referenced by the complaint.” *Lone Star Fund V (U.S.) L.P. v. Barclays Bank PLC*, 594 F.3d 383, 387 (5th Cir. 2010). The Court must then decide whether those facts state a claim for relief that is plausible on its face. *Bowlby*, 681 F.3d at 217. “A claim has facial plausibility when the pleaded factual content allows the Court to draw the reasonable inference that the defendant is liable for the misconduct alleged.” *Id.* (quoting *Ashcroft v. Iqbal*, 556 U.S. 662, 678 (2009)).

Issued patents are presumed valid, and the accused infringer bears the burden of proving invalidity by clear and convincing evidence. *See* 35 U.S.C. § 282, *Commil USA, LLC v. Cisco Sys.*, 1351 S. Ct. 1920, 1929 (2015).

The Defendants’ motions to dismiss are filed under Rule 12(b)(6). Ordinarily, as this Court well knows, evidence outside the pleadings is not considered on a Rule 12(b)(6) motion. However, on a Rule 12(b)(6) motion, Fed. R. Civ. P. 12(d) expressly states that “[a]ll parties must be given a reasonable opportunity to present all the material that is pertinent to the motion.” If the Court considers matters outside the pleadings on a Rule 12(b)(6) motion, “the motion must be treated as one for summary judgment under Rule 56.” *See* Fed. R. Civ. P. 12(d); *accord Flores v. Sullivan*, 945 F.2d 109, 110 n.3 (5th Cir. 1991) (“While the [Defendant] filed a Motion to Dismiss (presumably under [Rule] 12(b)(6)), the district court properly converted the motion for dismissal into a Rule 56 motion for summary judgment since the Court considered material outside the pleadings, namely the affidavits.”). Accordingly, the motions to dismiss must be treated as Rule 56 motions for summary judgment if and when the Court considers Semantic Search’s

supplemental evidence. To the extent the Court treats the Motions to Dismiss as Rule 56 summary judgment motions, all evidence presented by Semantic Search is to be believed, and all justifiable inferences are to be drawn in its favor. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 255 (1986).

B. Legal Standards for Subject Matter Eligibility Under 35 U.S.C. § 101

This Court is also quite familiar with the legal standards for subject matter eligibility under 35 U.S.C. § 101. Generally, the “subject matter eligibility” analysis consists of two steps. The first step concerns whether the patent claims at issue are directed to an “abstract idea.” If not, the claims pass muster under § 101, and if so, the analysis proceeds to the second step. In the second step, the Court must determine if the elements of the claim, individually, or as an ordered combination, contain an inventive concept that transforms the nature of the claim into a patent-eligible application. *See Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1296-97 (2012). In assessing subject matter eligibility, the Court must consider each claim as a whole, on a claim-by-claim basis. *See Diamond v. Diehr*, 450 U.S. 175, 188, 101 S. Ct. 1048, 1058-59 (1981).

1. Step One of the *Alice/Mayo* Analysis

At step one of the *Alice/Mayo* analysis, “the claims are considered in their entirety to ascertain whether their character *as a whole* is directed to excluded subject matter.” *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015) (emphasis added). This step requires the Court to look at the “focus of the claimed advance over the prior art” to determine if the claim’s “character as a whole” is directed to excluded subject matter. *Affinity Labs of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016). Claims implemented purely in software are not necessarily directed to patent-ineligible abstract ideas under step one. *See Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016) (“Software can make

non-abstract improvements to computer technology just as hardware improvements can”); *id.* (“We thus see no reason to conclude that all claims directed to improvements in computer-related technology, including those directed to software, are abstract and necessarily analyzed at the second step of *Alice*, nor do we believe that *Alice* so directs.”); *see also id.* at 1338 (“[W]e are not persuaded that the invention’s ability to run on a general-purpose computer dooms the claims.”); *id.* at 1339 (“Much of the advancement made in computer technology consists of improvement to software that, by their very nature, may not be defined by particular features but rather by **logical structures and processes**”) (emphasis added).

At step one, the Federal Circuit has distinguished claims that are “directed to **an improvement to computer functionality** versus being directed to an abstract idea.” *Id.* at 1335 (emphasis added). In *Enfish*, for example, the Federal Circuit found claims to be not abstract because the “plain focus of the claims is on an improvement to computer functionality itself,” distinguishing such patent claims from those involved in *Alice*, which involved “economic or other tasks for which a computer is used in its ordinary capacity.” *Id.* at 1336. By contrast, in *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016), the Federal Circuit determined that certain claims were directed to an abstract idea because “the focus of the claims is not on ... an improvement in computers as tools, but on certain independently abstract ideas that use computers as tools.” *Enfish* adds that a patent specification’s disparagement of prior art or “conventional” implementations may bolster a conclusion that claims are directed to a non-abstract improvement of technology rather than an abstract idea. *Enfish*, 822 F.3d at 1337, 1339.

Courts should not “oversimplify[] key inventive concepts or “downplay” an invention’s benefits in conducting a step-one analysis. *See id.* at 1337; *see also McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1313 (Fed. Cir. 2016) (“[C]ourts ‘must be careful to avoid

oversimplifying the claims’ by looking at them generally and failing to account for the specific requirements of the claims.”) (quoting *In re TLI Comm’ns LLC Patent Litig.*, 823 F.3d 607, 611 (Fed. Cir. 2016)). “Whether at step one or step two of the *Alice* test, in determining the patentability of a method, a court must look to the claims as an ordered combination, without ignoring the requirements of the individual steps.” *McRO*, 837 F.3d at 1313.

2. Step Two of the *Alice/Mayo* Analysis

At step two, the Federal Circuit has instructed Courts to “look to both the claim as a whole and the individual claim elements to determine whether the claims contain an element or combination of elements that is sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself.” *McRO*, 837 F.3d at 1312 (internal brackets and quotation marks omitted). The “standard” step-two inquiry includes consideration of whether claim elements “simply recite ‘well-understood, routine, conventional activit[ies].’” *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2016) (quoting *Alice*, 134 S. Ct. at 2359). “Simply appending conventional steps, specified at a high level of generality, [is] not **enough** to supply an inventive concept.” *Alice*, 134 S. Ct. at 2357 (emphasis in original; internal quotation marks omitted).

However, “[t]he inventive concept inquiry requires more than recognizing that each claim element, by itself, was known in the art.” *Bascom*, 827 F.3d at 1350. In *Bascom*, the Federal Circuit held that “the limitations of the claims, taken individually, recite generic computer, network and Internet components, none of which is inventive by itself,” but nonetheless determined that an **ordered combination** of these limitations was patent-eligible under step two. *Id.* at 1349.

Although the “mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention,” *Alice*, 134 S. Ct. at 2358, “this is not a license to delete all computer-related limitations from a claim and thereby declare it abstract.” *PerdiemCo, LLC v. Industrack LLC*, 2016 WL 5719697 at *5 (E.D. Tex. Sept. 21, 2016) (citing *McRO*, 837 F.3d at 1313). “The presence of computer components in a claim can often be consequential to the outcome of the § 101 analysis – in some circumstances the computer-related limitations of the claim will dispositively render the claim patent-eligible.” *PerdiemCo*, 2016 WL 5719697 at *5 (citing *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014) (“the claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks.”)). “Moreover, the mere fact that all the recited computer components are ‘conventional’ because the applicant did not invent an entirely new kind of computer is not inherently troubling.” *PerdiemCo*, 2016 WL 5719697 at *5 (citing *Enfish*, 822 F.3d at 1338 (“we are not persuaded that the invention’s ability to run on a general-purpose computer dooms the claims”); *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418-19 (2007)). Finally, “processes that automate tasks that humans are capable of performing are patent eligible if properly claimed.” *PerdiemCo*, 2016 WL 5719697 at *6 (citing *McRO*, 837 F.3d at 1313).

3. Preemption

In addition, the Supreme Court has emphasized that the driving concern for subject matter ineligibility is preemption. *Alice*, 134 S. Ct. at 2354. Patents that do not pose a risk of preemption remain eligible for the monopoly granted under U.S. patent law. *Id.* at 2354-55. Courts recognize that the extent of preemption is an important factor in the § 101 analysis. *See, e.g., DDR Holdings*, 773 F.3d at 1259 (“the claims at issue do not attempt to preempt every application of the idea of

increasing sales by making two web pages look the same ... Rather, they recite a specific way ...”).

The Federal Circuit has considered the issue of preemption at both steps one and two of the *Alice/Mayo* analysis. For example, in *McRO*, in support of its conclusion that a claim was patent-eligible under step one, the Federal Circuit held that limitations of a claim “prevent[ed] preemption of all processes for achieving automated lip-synchronization of 3-D characters.” *McRO*, 837 F.3d at 1315. In addition, in *Bascom*, in support of the Court’s conclusion that claims reciting “a specific, discrete implementation of the abstract idea of filtering content” were patent-eligible under step two, the Federal Circuit explained that the claims did not preempt “all ways of filtering content on the Internet.” *Bascom*, 827 F.3d at 1350.

4. Determination of Subject Matter Eligibility at the Pleadings Stage

Although “under certain circumstances, a determination of patent validity under § 101 may be made at the pleading stage on a motion to dismiss, the issue of patentable subject matter requires a legal analysis that can – and often does – ‘contain underlying factual issues.’” *Certified Measurement, LLC v. CenterPoint Energy Houston Electric LLC*, 2015 WL 1432324 at * 2 (E.D. Tex. Mar. 30, 2015) (quoting *Accenture Global Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1340-41 (Fed. Cir. 2013)). Cases may be dismissed only if the only plausible reading of the patent at issue is that there is clear and convincing evidence of invalidity on the grounds of subject matter ineligibility. *See, e.g., Rockstar Consortium US LP, Inc. v. Samsung Elecs. Co., Ltd.*, 2014 WL 1998053 at *3 (E.D. Tex. May 15, 2014) (Gilstrap, J.) (*analysis re-confirmed post-Alice in Rockstar Consortium US LP, Inc. v. Samsung Elecs. Co., Ltd.*, Case No. 2:13-cv-894, Dkt. No. 75 (E.D. Tex. July 21, 2014)) (“If there are factual disputes about the patent’s claims, however, the question of patentable subject matter should be reserved until claim construction.”).

C. The Claims of the Patents-in-Suit Are Subject Matter Eligible Because They Are Not an Abstract Idea and They Contain Inventive Concepts

1. The Specification Describes Problems with the Prior Art and the Nature of the Inventive Concepts Embodied in the Patents-in-Suit

The inventions of the patents-in-suit are a number of improved methods for “computer-aided searches of large search spaces, such as the world wide web.” *See* 1:16-17. In the patents-in-suit, the inventors improved upon prior art approaches and solved an open problem related to the accuracy and efficiency of textual, lexical, semantic searches within a computerized environment. *See generally* 1:16 through 2:25. The inventors do not claim to have invented computerized search technology; rather, they improved existing techniques to overcome prior art problems. *See* 2:20-25. And the invention is not finding a desired item, as the Defendants mischaracterize in their briefs. That is merely one end, or goal, of *use* of the inventions; it is not the inventions themselves. Rather, the inventions described in the claims of the patents-in-suit are technical, computerized solutions to problems that are particular to computer networks and the Internet. (Complaint ¶ 19)

The prior art and state of affairs that existed as of the time of invention of the patents-in-suit is documented in the specification. The “Background of the Invention” discusses problems inherent in the prior art, such as with pure textual searches and with searches that inject lexical associations iteratively. Pure textual searches result in numerous false hits, some of which are wildly out of scope compared to what the user intended, caused in part by the fact that no semantic meaning is associated with search words. Somewhat improved searches that inject lexical associations iteratively could improve upon pure textual searches, but they result in the repetitive construction of longer and longer search strings, and they do not reliably eliminate false hits or wildly out of scope results. The specification of the patents-in-suit describes the state of the prior art and its shortcomings:

There are many descriptions of computer-aided searches of large search spaces, such as the world wide web, whereby narrowing the search space to a successively smaller and more precise area of interest is accomplished using one or more algorithms involving lexicons.

One problem with the use of lexicons is the limitation inherent in a pure textual search. For example, although a lexical search of the world wide web for matches to “blue sweater” might be refined through human-computer interactions to the more specific “blue sweater crew neck men’s large”, the resulting search result set is likely to include citations for:

[Descriptions of false hits ...]

Even more sophisticated computer-aided lexical searches employing lexical associations do not appreciably and consistently reduce the occurrences of search results returning citations that are wildly outside of the target scope (false hits). One commonly employed partial solution to the shortcomings of a pure lexical search is to inject lexical associations into the lexical refinements. Prior attempts to inject lexical associations into computer-aided searches have relied on the existence of a virtual expert advisor, or other access to a domain-specific knowledgebase. In practice such implementations merely inject lexical associations iteratively, resulting in the construction of longer and longer search strings. This technique can result in a rapid narrowing of search space, however this technique does not reliably eliminate or reduce the occurrence of false hits or wildly out of scope citations.

1:16-60. Figure 1 also shows examples of prior art searching, *i.e.*, (1) a simple search engine search for “blue sweater”; (2) an improved search wherein the search for “blue sweater” is followed by lexical suggestions such as “crew, neck, size, and children”; and (3) another improved search using lexical refinement to lengthen the search string by using user confirmations to add to the “blue sweater” search the additional terms +size, +crew, and NOT(children). Thus, the specification makes abundantly clear that these problems, which are addressed by the claims of the patents-in-suit, are particular to computer networks and the Internet. (Complaint ¶ 20)

The asserted claims of the patents-in-suit describe various solutions to the previously-existing problems with computer searches, each through a defined sequence of method steps, such

that implementation of the specific steps results in achieving a desired result. The specification confirms this, in general terms:

In use, a mapping between the human-specified values/characteristics and the correct corresponding attribute is required in order to enable an unambiguous and effective (i.e., few or no false hits) computer-aided search of a large structured data search space.

Thus, what is desired is a method and apparatus to confirm the mapping ...

2:15-21 (emphasis added). It can readily be seen, from this short excerpt and from a closer examination of the claims of the patents-in-suit, that the problem being solved exists solely in the realm of computers and technology, and the solutions of the patents-in-suit are solely computer- and technology-based. (Complaint ¶ 21)

And, not only do the claims of the patents-in-suit solve a particular problem with computer searches using computer- and technology-based solutions, they are limited to a particular application – that is, matching buyer offers to seller bids (for example, items offered for sale). (Complaint ¶ 22)

2. A Close Analysis of Claim 10 of the ‘237 Patent Illustrates That the Methods of the Patents-in-Suit Apply Only to Computer Records in a Particularized Format and Describe Specific Methods in Detail

For example, Claim 10 of the ‘237 Patent⁹ describes a specific computer-implemented method comprising no less than 14 separate steps (*see* 9:19 to 10:25 (emphasis added)):

10. A computer-implemented method comprising:

[1] receiving user input received from a web site interface configured to capture user input constituting a search for an item;

⁹ Claim 10 is presented merely for exemplary purposes. This is not an admission that Claim 10 of the ‘237 Patent is representative of any claim of the other patents-in-suit, nor of any dependent claims. A full analysis of each of these claims cannot be presented within the space constraints of this Response; however, Semantic Search is willing to provide such an analysis if it would be helpful to the Court.

The preamble and element 1 make clear that the method is computer-implemented and requires a web site interface, confirming that the claims exist and apply only in the realm of computers and technology. Element 1 further confirms that the purpose and field of the invention are in search technology.

[2] storing an enumerated list of category descriptions of items potentially responsive to the search and including the item, at least some of the category descriptions comprising two or more item attributes;

[3] storing, in a first database, an entity description for at least some of the potentially responsive items, the entity description comprising at least one value assigned to each item attribute of the two or more item attributes;

Elements 2 and 3 impose certain requirements on the structure and contents of the database or other search corpus on which the search functionality operates. For example, the database must contain information regarding *items*, with *entity descriptions* for such items. The database must contain *category descriptions*. As the specification shows, *category descriptions* may be things such as Men's Apparel, Outerwear, Sweater ("apparel.men.outerwear.sweater"), or Women's Apparel, Outerwear, Sweater ("apparel.women.outerwear.sweater"), or Men's Apparel, Sportswear, Sweater ("apparel.men.sportswear.sweater"). See 3:25 through 4:60. In addition, the *entity descriptions* must have at least one *value* assigned to each *item attribute* of two or more item attributes that are related to category descriptions. Back to the specification, *item attributes* may be things like size and color for clothing, or things like model year, model name, exterior color, and body style for cars. See, e.g., 2:1-13. In this example, *values* for such attributes are things like S, M, L or XL for the size of clothing; and red, green, blue, gray and black for the color of clothing. Accord *id.* Each of these claim elements imposes structure and limitations on the database and the information contained therein, and entity descriptions and category descriptions must be computer data.

[4] receiving from a user an input word list comprising a search input to a search engine, wherein at least one word of the input word list comprises a value of an implied attribute of an item;

[5] performing a lexical search on the input word list using the search engine to return search results from a search corpus accessible by the search engine;

[6] scoring each category description of a plurality of category descriptions, the scoring determined at least in part by mapping each word of the input word list against corresponding entity descriptions and tallying a number of lexical matches between the word and the entity description to form a plurality of scored category descriptions, wherein an occurrence of one or more lexical matches increases the score of a corresponding scored category description;

[7] displaying to the user the scored category descriptions based at least in part on the tally of lexical matches;

Elements 4, 5, 6 and 7 require certain limitations to how the search is initiated and how the improved search functionality will return the first level of results to the user. For starters, the search requires an ***input word list*** from the user. From there, the search engine using the method of Claim 10 will determine what results it will return to the user in a particular way – it will ***perform a lexical search*** and it will ***score*** category descriptions, with the scoring determined at least in part by lexically ***mapping*** each word of the input word list against entity descriptions, ***tallying*** the lexical matches of the entity descriptions by category, and displaying to the user a ***plurality of scored category descriptions***. For example, Figure 2 shows the results of an initial lexical search for the input word list “sweater large crew NOT (children),” wherein the initial plurality of category descriptions returned to the user are “Apparel.men.outerwear.sweater” with 550 lexical matches to entity descriptions, and “Apparel.women.outerwear.sweater” with 1282 lexical matches to entity descriptions. See Fig. 2 and 4:10-14.

[8] prompting the user to select a first category description of the scored category descriptions;

[9] receiving a user selection of the first category description to generate a selected category description;

[10] displaying to the user, suggested item attributes based at least in part on the selected category description;

Elements 8, 9 and 10 continue the search process to further refine the search results in a very specific way. The website or other search interface now prompts the user to select his or her preferred category description and receives this selection from the user (*i.e.*, the ***selected category description***). Continuing with the “sweater” example, the user in the situation depicted in Figure 3 has now selected a men’s sweater. The website or other search interface then displays to the user ***suggested item attributes*** for a men’s sweater. Still looking at Figure 3, the display has presented to the user suggested attributes for a men’s sweater of Size, Style, Color, and Manufacturer. See Fig. 3.

[11] receiving from the user, in response to the displayed suggested item attributes, a selection of a specific order of the suggested item attributes of the selected category description;

[12] iteratively displaying to the user, after respective responsive inputs from the user, a value or a range of values for each suggested item attribute of the suggested item attributes of the selected category description until the user has selected one of a preferred value or acceptable range of values for at least some of the suggested item attributes, wherein at least some of the respective responsive inputs by the user causes a dynamic generation and display of user-selected ranking of attribute values;

[13] displaying to the user at least some user selected attribute values in a final order based on a selection by the user; and

Elements 11, 12, and 13 comprise the next stage of the search process, which is an iterative refinement of the values the user prefers for one or more of the suggested item attributes. This may be readily seen by looking at Figure 4. There, the user has been presented with value choices for the item attributes Size, Style, Color, Brand, and Price. For example, the values for Size are Medium, Large, and X-Large; the values for Style are Cardigan and Crew Neck; and the values for Color are Blue, Green, Tan and Brown. Each selection of a value for an item attribute further refines the search and narrows the set of matching items.

[14] displaying to the user an organized array of matching items from the search corpus to enable selection by the user of a final selected item.

Finally, in element 14, once inputs for values of item attributes have been obtained from the user, the user receives a display of an organized array of items that match his or her search, for instance, one or more size large, blue cardigan sweaters, and the user may select his or her item.

As the above discussion demonstrates, the claims of the ‘237 Patent and the other patents-in-suit, taken as a whole, describe very specific inventions and methods. They are not abstract. They solved and/or improved upon problems with the prior art and therefore contain inventive concepts. These claims are the quintessential “solution [that] is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks.” *DDR Holdings*, 773 F.3d at 1257.

3. The Defendants’ Characterization of the Claims Oversimplifies the Inventive Methods and Fails to Account for the Fact that the Claims Have No Application Outside the Computer Environment

The Defendants would like to have the Court believe that the claims of the patents-in-suit are simply long-standing methods performed by humans that the patents require to be performed on computers. This is a complete mischaracterization of the claims and the scope of the patents-in-suit. To the contrary, the claims of the patents-in-suit literally have ***no application*** outside the computer environment. The inventors solved a problem with then-existing computerized search functionality by inventing methods “for mapping lexical keywords into entity description semantics in order to create unambiguous buyer-confirmed descriptions of entities[,]” which produced tangible results that improved upon the prior art. 2:30-34; *see also* 2:15-25. They do not simply claim an “abstract idea.”

The specification, which cannot be impugned or challenged by Defendants on a motion to dismiss (*see, e.g., MAZ Encryption Techs. LLC v. BlackBerry Corp.*, 2016 WL 5661981 at *5 (D.

Del. Sept. 29, 2016) (“the Court must take the specification’s statements about the purported invention to be true. The Court is not free to accept Defendant’s contrary attorney argument that claim 31 is directed to a ‘conventional’ way of transparent encryption.”)), from the very start confirms that the inventions are limited to and only apply in a computer and technology environment:

- The very first sentence of the “Background of the Invention” shows that the patents-in-suit apply to “computer-aided searches of large search spaces, such as the world wide web[.]” 1:16-17.
- The second paragraph of the “Background of the Invention” further confirms that relevant fields for the inventions are “textual search” and a “lexical search of the world wide web[.]” 1:21-23.
- The beginning of the fourth paragraph once again confirms that the subject matter being discussed is “computer-aided lexical searches[.]” 1:46.
- And the fifth paragraph further describes that the inventions deal with “humans interact[ing] with computer-aided search engines[.]” 1:61-62.

By improving upon existing computer-aided search technology, the inventions of the patents-in-suit “do[] not simply use a computer to automate [what] was done previously, but rather improve[] upon what was previously done with computers, solving a computer specific problem ... [They] expand[] the functionality of existing computer software, local or on a computer network, by addressing a problem specific to the realm of computers.” *Motio, Inc. v. BSP Software LLC*, 154 F.Supp.3d 434, 440 (E.D. Tex. 2016) (Mazzant, J.) (citing *DDR Holdings, LLC v. Hotels.com L.P.*, 773 F.3d 1245 (Fed. Cir. 2014)). The defendants in *Motio*, like the Defendants here, argued that the patent at issue “does not recite an inventive concept beyond the abstract idea, and that the computer-implemented limitations of the patent ‘merely draw on the generic functionality of pre-existing computer systems’ such as creating records,” *etc.*, “in essence, point[ing] to various pre-existing and conventional concepts and argu[ing] that the invention describes nothing more.” *Motio*, 154 F.Supp.3d at 439. The Court, however, found that the

software solution described in the patent solved a pre-existing problem of a business intelligence system lacking native version control and thus amounted to “significantly more” than an abstract idea. *Id.* at 439-40. Invoking *DDR Holdings*, Judge Mazzant denied the defendant’s summary judgment motion, holding the version control software patent at issue to be subject matter eligible. *Id.* at 440-41. Likewise here, the claims of the patents-in-suit use specific methods of lexical search and mapping and confirmation processes to improve upon the functionality of existing computer software and thereby address a problem specific to the realm of computers.

4. *DDR Holdings, Enfish* and Other Federal Circuit Cases Support the Subject Matter Eligibility of the Patents-in-Suit

In *DDR Holdings*, the Federal Circuit upheld the subject matter eligibility of patent claims that solved problems particular to the Internet. *DDR Holdings*, 773 F.3d at 1257. Like the claims at issue here, the claimed system in *DDR Holdings* was in the field of e-commerce. *See, e.g., id.* at 1249 (“the system comprising a computer store containing data ...”). The gravamen of the Court’s holding was that the claims were subject matter eligible because “the claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks.” *Id.* at 1257. The same is undoubtedly true here – the claims have literally no application outside the field of computerized search of computer data records having particular characteristics. The level of specificity of the claimed methods here is also as detailed, or even more so, than the specificity of the representative claim in *DDR Holdings*.

Similarly, as with the claims relating to a self-referential table in *Enfish*, the claims of the patents-in-suit are not abstract ideas under step one of the *Alice/Mayo* analysis. The focus of the claims of the patents-in-suit is on the specific asserted improvement in computer capabilities (*i.e.*, improved computer search functionality through a new, specific method), as opposed to taking a fundamental economic or business practice and saying “do it on a computer.” *See Enfish*, 822

F.3d at 1335-36. The claims do not purport to cover the “concept” of search and retrieval; rather, they are specific methods that were different than the prior art, and different from other potential solutions being discussed and proposed by top academics and businesses at the relevant time (as the additional evidence discussed below further shows). As the Court stated in *Enfish*, if claims were analyzed at such a high level of abstraction as “searching for and retrieving information based on lexical mapping,” untethered from the language of the claims, this would “all but ensure[] that the exceptions to § 101 swallow the rule.” *Id.* at 1337 (also noting that “the claims are not simply directed to *any* form of storing tabular data, but instead are specifically directed to a *self-referential* table for a computer database.”).

The Court in *Enfish* also noted that the specification of the patent at issue there “also teaches that the self-referential table functions differently than conventional database structures.” *Id.* The same is true here – the specification clearly describes the state of the prior art and its limitations, and it explains how the inventions of the patents-in-suit function differently, and better, than the prior art. This demonstrates that the methods of the patents-in-suit were non-conventional at the time, and this conclusion is further confirmed by the research papers and commercial report submitted by Semantic Search as additional evidence, as well as by the Declaration of Richard Bridgeman (all discussed in more detail below).

Moreover, even though the specification was written long before the *Alice* opinion and other Supreme Court and Federal Circuit opinions holding that methods “directed to an improvement in the functioning of a computer” are a hallmark touchstone demonstrating subject matter eligibility, the specification actually includes a specific reference to “improving the functioning of a computer.” *See, e.g., Enfish*, 822 F.3d at 1338. At 3:45-49, the specification states, “In one embodiment of this operation, words/strings that are known to be attribute values

(e.g., names of colors) and are not likely to be found in any hierarchical category description, are pre-screened from the scoring process, *thus reducing compute time required for this operation.*”) (emphasis added).

The subject matter eligibility of the patents-in-suit is further supported and confirmed by Federal Circuit cases subsequent to *DDR Holdings* and *Enfish*. In *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288 (Fed. Cir. 2016), the Court reversed the District Court and held software claims to be subject matter eligible, finding that the claims entailed “an unconventional solution ... to a technological problem ... to achieve an improvement in computer functionality,” even though it used only generic computer hardware components in doing so. *Amdocs*, 841 F.3d at 1300-01. This is exactly like the claims of the patents-in-suit here, and even a cursory comparison of claim 1 of the ‘065 patent at issue in *Amdocs* reveals that the upheld claim is substantially less detailed and specific than any claim of the patents-in-suit here.

In *Trading Techs. Int’l, Inc. v. CQG, Inc.*, 675 Fed. App’x 1001 (Fed. Cir. 2017), the Court upheld the subject matter eligibility of software claims related to particular methods for the electronic trading of stocks, bonds, and the like. *Trading Techs.*, 675 Fed. App’x at 1002-06. Even though the patents were in the field of a fundamental economic concept (*i.e.*, trading stocks and bonds), the Court looked deeper into the claims to see that they actually were more specific and solved a particular problem: “The claims require a specific, structured graphical user interface paired with a prescribed functionality directly related to the graphical user interface’s structure that is addressed to and resolves a specifically identified problem in the prior state of the art.” *Id.* at 1004. Again, this reasoning is exactly on-point with the claims at issue here – even though they are in the field of e-commerce, they represent specific solutions to specifically identified problems in the prior state of the art.

In *Thales Visionix Inc. v. United States*, 850 F.3d 1343 (Fed. Cir. 2017), the Court held that some simple claims were subject matter eligible because they used known inertial sensors “in a non-conventional manner to reduce errors ...” *Thales*, 850 F.3d at 1348-49. In doing so, the Court re-affirmed the principles of *Enfish* that apply directly to this case: “Just as claims directed to a new and useful technique for defining a database that runs on general-purpose computer equipment are patent eligible, *Enfish*, 822 F.3d at 1337-38, so too are claims directed to a new and useful technique for using sensors to more efficiently track an object on a moving platform.” *Thales*, 850 F.3d at 1349. And like the “non-conventional” use of sensors in *Thales*, the specification and Semantic Search’s additional evidence demonstrate that the methods of the patents-in-suit were non-conventional at the time, different than the prior art systems and numerous other solutions being discussed and proposed by top academics and businesses.

Most recently, in *Visual Memory LLC v. Nvidia Corp.*, 867 F.3d 1253 (Fed. Cir. 2017), the Court upheld the subject matter eligibility of some rather simple claims related to the configuration of a computer memory system. The Federal Circuit once again re-affirmed the principles of *Enfish* that apply to Semantic Search’s claims here, such as the Court needing to “ask whether the claims are directed to an improvement to computer functionality versus being directed to an abstract idea” and the “key question” being “whether the focus of the claims is on the specific asserted improvement in computer capabilities.” *Visual Memory*, 867 F.3d at 1258.

5. The Patents-in-Suit Contain Inventive Concepts and Therefore Satisfy Step 2 of the *Alice/Mayo* Test

In addition, even if the claims of the patents-in-suit could be found to be merely an “abstract idea” or that their individual limitations are non-inventive or generic, taken as a whole they contain inventive concepts that satisfy step two of the *Alice/Mayo* test. “The inventive concept inquiry requires more than recognizing that each claim element, by itself, was known in the art. As is the

case here, an inventive concept can be found in the non-conventional and non-generic arrangement of known, conventional pieces.” *Bascom*, 827 F.3d at 1350. As described in detail above, the claims do not merely recite the abstract idea of “searching for and retrieving information” along with the requirement to perform it on the Internet, or to perform it on a set of generic computer components. *Compare Bascom*, 827 F.3d at 1350. The claims contain significant “individual steps” and structure such as the information that is required to be in the database, the lexical mapping, the scoring, and the iterative steps of the patented methods. And as in *Bascom*, the patents-in-suit “describe how its particular arrangement of elements is a technical improvement over prior art ways” of searching for and retrieving information. *Id.* Therefore, as in *Bascom*, the claims of the patents-in-suit “improve an existing technological process” and are therefore patentable as supplying the requisite inventive concept to satisfy step two of the *Alice/Mayo* test. *Id.* at 1350-51.

Mr. Bridgeman also elaborates on the “inventive concept” in his Declaration. *See* Bridgeman Declaration at ¶¶ 22-24. There, Mr. Bridgeman discusses that he and his co-inventor “proposed and described methods for search and selection from online product catalogs that confirmed user semantics based on a previously confirmed category of products” and further discussed certain required steps. *Id.* at ¶ 22. He further noted that “the state of the art at the time of the invention failed to proposed computer search solutions that confirmed user semantics pertaining to sought-after items, where the technique for confirmation includes iterative presentation of item attributes that are drawn from items in a category of products that had been previously identified through lexical search applied to category descriptions and then confirmed by the user.” *Id.* at ¶ 23. He further confirmed that none of the research in the e-commerce space appreciated “that iterations of displays presented to users for confirmations of suggested categories

and/or suggested item attributes could result in highly successful (*e.g.*, fast and unambiguous) matching of buyer to product.” *Id.* Finally, he noted that the patents-in-suit actually show how to implement the inventions from a technical perspective and gave specific examples in support. *Id.* at ¶ 24.

6. A Computerized Search Patent Was Recently Found Subject Matter Eligible in a Delaware Case

In a very instructive case, specifically in the computerized search field like this case, Judge Robinson of the District of Delaware found that a patent was subject matter eligible. *Improved Search LLC v. AOL Inc.*, 170 F.Supp.3d 683 (D. Del. 2016). In *Improved Search*, the Court characterized the patents at issue as relating “generally to translation of query and retrieval of multilingual information on the web.” *Id.* at 692. In other words, like here, the patents covered methods for improved searching in a computer environment. The claim that the Court examined closely read as follows:

A method for performing a contextual search and retrieval of documents in a computer network, comprising:

receiving through an input device, a query in a first language;

processing said query to extract at least one content word from the query;

performing dialectal standardization of the at least one content word extracted from the query;

translating the at least one dialectally standardized content word into a second language through a translator;

performing a contextual search in the second language based on the at least one translated content word, using a search engine in the second language; and

obtaining the search results in the second language in the form of at least one of site names (URLs) and documents, satisfying a search criteria.

Id. Also like the patents-in-suit here, the patents at issue in *Improved Search* contained a description of the problem existing in the prior art (*i.e.*, inaccurate and/or incomplete search results) and discussed how the patents purported to solve those problems. *Id.*

The defendant in *Improved Search*, like the Defendants here, tried to analogize the method of the patent at issue to a set of tasks performed by a human and asserted that the patent was directed to the abstract idea of searching for documents in a foreign language by translating a modified search request. *Id.* at 693. The Court rejected this argument: “That a method involving a computer and the internet may be broken down into a series of steps performed by a human does not resolve whether such method is an ‘abstract idea’ The methods at bar do not perform a business method known from the pre-Internet world on the computer, instead, the methods contain an additional layer of complexity. The methods of the ‘101 patent ‘address the problem of ensuring that Internet search engines retrieve not only Web pages and documents written in the query language (source), but in foreign (target) languages as well.’” *Id.* at 694. The Court continued: “The method of the ‘101 patent provides a specific series of steps designed to optimize search results and retrieve target language URLs or documents using search engine queries on the Internet. The steps include extracting content words from a query, performing dialectal standardization of the words, and translation.¹⁰ As in *DDR*, the ‘claims at issue here specify how interactions with the Internet are manipulated to yield a desired result.’” *Id.* (quoting *DDR Holdings*, 773 F.3d at 1258). And finally, the Court concluded: “the solution provided by the patents at issue is not a ‘routine and conventional’ use of computer and Internet technology. Although the patents at issue use computers, the methods recite sufficiently specific steps, so as to ensure that the claims are ‘more than a drafting effort designed to monopolize the [abstract idea],’ and will not disproportionately tie up the use of the underlying ideas.” *Id.* (citing *Alice*, 134 S.Ct. at 2354, 2357; *Mayo*, 132 S.Ct. at 1294).

¹⁰ As the Court can readily see, all of these activities are human-performable.

Judge Robinson's opinion with respect to the search-related patents at issue in *Improved Search* could be copied virtually verbatim here. This case and *Improved Search* involve patents covering improved search functionality in a computer environment such as the Internet, both describe problems in the prior art, and both describe specific solutions and improvements through a specific series of steps designed to improve search results. The *Improved Search* case strongly supports the subject matter eligibility of the patents-in-suit and refutes Defendants' arguments.

D. The Claims of the Patents-in-Suit Do Not Preempt All Methods of Searching for and Retrieving Information

As discussed above, preemption is an important factor in the § 101 analysis. *See Alice*, 134 S. Ct. at 2354; *DDR Holdings*, 773 F.3d at 1259 (“the claims at issue do not attempt to preempt every application of the idea of increasing sales by making two web pages look the same . . . Rather, they recite a specific way to automate the creation of a composite web page by an ‘outsourced provider’ that incorporates elements from multiple sources in order to solve a problem faced by websites on the Internet.”). Semantic Search has demonstrated above that the claims of the patents-in-suit do not preempt all methods of searching for and retrieving information; to the contrary, it has shown that there are prior art methods of search that are available, albeit inferior. Semantic Search has also shown that the claims of the patents-in-suit contain specific steps that limit the claims to the particular methods described. In addition, Semantic Search notes that the fact that it asserts only three of the patents-in-suit against Yahoo, whereas it has sued SportsGiant on all four patents, shows that not all of the claims of the patents-in-suit cover all methods of searching and retrieving information in an e-commerce environment. Finally, the academic papers and commercial research report submitted by Semantic Search specifically demonstrate in even more detail that there were other prior art and proposed methods that could be used in this field (although they are inferior and do not constitute acceptable non-infringing alternatives).

When patent claims describe specific methods that do not preempt a field (like the patents-in-suit here), as opposed to broad preemptive methods, it further confirms that such claims are not directed to an abstract idea. *See, e.g., McRo*, 837 F.3d at 1315-16 (“There has been no showing that any rules-based lip-synchronization process must use rules with the specifically claimed characteristics.... By incorporating the specific features of the rules as claim limitations, claim 1 is limited to a specific process for automatically animating characters using particular information and techniques and does not preempt approaches that use rules of a different structure or different techniques.”); *MAZ Encryption*, 2016 WL 5661981 at *9 (“Defendant has not produced any evidence to support any preemption concerns. Consequently, the preemption consideration confirms the Court’s conclusion at step 1 that claim 31 is not directed to an abstract idea.”).

E. The Additional Evidence Further Demonstrates That the Claims of the Patents-in-Suit Are Subject Matter Eligible

1. Research and Academic Reports and Papers Around the Time of the Invention

Semantic Search’s evidence includes three research and/or academic papers and one commercial research report.¹¹ The three research/academic papers demonstrate that the e-commerce search-and-retrieval area was a problem, and that skilled artisans – including researchers from top universities and some of America’s largest companies – were working on and proposing many different and varied solutions (none of which were the methods of the patents-in-suit). There were many possible alternatives being proposed and implemented. The commercial report shows that every single site of major e-retailers had problems prior to the inventions of the patents-in-suit and that there were and are many alternative ways to try to solve the problems. All of these materials provide further evidentiary support that the methods of the patents-in-suit (a)

¹¹ These papers and report were produced by the Defendants in the *Aldo* case in their P.R. 3-4(a) disclosures as purported “prior art.”

solved a problem necessarily rooted in computer technology and specifically arising in the realm of computer networks; (b) improved the functioning of the computer performing the method; (c) contained an inventive concept; (d) did not preempt the field of e-commerce search; and (e) was/is one of many alternatives¹² to try to solve the “e-commerce search-and-retrieval” problem.

a. The Silverman UPenn Paper

The Silverman UPenn Paper was authored by Dr. Barry G. Silverman, Director of Systems Engineering at the University of Pennsylvania, along with two co-authors associated with a company in the commercial e-commerce space.¹³ The Paper and its proposed solution are in the exact same field as the patents-in-suit, as evidenced by the very first sentence of the Paper: “A long-standing problem facing the field of Natural Language Query (NLQ) is that NLQ ... isn’t able to scale up to the complexities and performance demands of large-scale online catalogs (e.g., e-commerce shopping sites).” *See* Silverman UPenn Paper at 1. Later in the Abstract, the Paper further makes clear that this is a problem specifically arising in the realm of computer networks, which requires inventive, technical solutions in order to improve the performance of the computer: “This paper expresses the NLQ of relational, online catalogs as an MDP [Markov Decision Process] problem Our research further delineates how to reduce the computational complexity of the MDP problem so as to obtain solutions in near real-time.” *Id.* The authors believed that

¹² None of these alternatives are acceptable non-infringing alternatives. In fact, Mr. Bridgeman specifically discusses in his declaration that prior art alternatives were not acceptable, because they resulted in user frustration. User frustration and loss of sales as a result of using prior art methods is also a subject discussed in the “prior art” references.

¹³ The co-authors are identified as being associated with a company known as Equalfooting.com. According to a story in the Washington Business Journal, EqualFooting was founded in 1999 and “billed itself as an online marketplace where vendors could compete with one another regardless of their size.” *See* <https://www.bizjournals.com/washington/stories/2002/01/21/daily2.html> (accessed on Sept. 12, 2017). Given this description and the content of the Silverman UPenn Paper, it appears that EqualFooting was squarely in the exact same field as the patents-in-suit.

their proposed solution resulted in “reasonable response times [] with better precision and quality” and that their proposed technique in this field “improves search of online shopping sites.” *Id.*

The Silverman UPenn Paper identified specific commercial problems with the state of the art at the time, and even quantified the extent of some of the problems: “As we all know only too well, browsing, searching, and buying via online web catalogs can be a time consuming, frustrating task. For example, [Reference 1] reports that over 80% of web shoppers have at some point left e-markets without finding what they want and that 23% of all attempted e-shopping transactions end in failure. Four of the top five failure modes are search-related[.]” *Id.* It further identified challenges in this area: “In general, several challenges confront one attempting to support search across product catalogs... [identifying challenges and types of ‘false hits’]. Finally, there is the challenge of trying to figure out the user’s intent and underlying search goal.” *Id.* at 2.

Like the inventors of the patents-in-suit, the authors of the Silverman UPenn Paper recognized the role of semantics (*i.e.*, meaning) in search terms and forming a query to a search engine using meaningful words. *See, e.g., Id.* at 10 (Fig. 2); *see also* Bridgeman Declaration at ¶ 19. However, the solution proposed in the Paper is dramatically different from the methods of the patents-in-suit. The authors of the Paper proposed a solution where a computer “Search Agent” acted as a “meaning translator” between the user and a commercial search engine and product catalog, with the “Search Agent” utilizing a Markov decision process to attempt to identify “good” results. *See, generally*, Silverman UPenn Paper at 7-14, particularly Figs. 1 & 2); *see also* Bridgeman Declaration at ¶ 19. This is a fundamentally different solution than the methods of the patents-in-suit, which require particularized forms of computer data records (including “category descriptions” and “entity descriptions”), a “scoring” step, and repeated iterations with the user. *See also* Bridgeman Declaration at ¶ 19 (“Although [the authors of the Silverman UPenn Paper]

recognized the inability of certain natural language processing techniques to fulfill the commercial need for reliably matching users to products of a catalog, the state of the art still failed to pose any solutions that engaged the user with a corpus of terms that derived from a *particular category* that was identified by the user. Instead, the disclosure of their research concludes without any mention of deriving terms from a category description of a *particular selected category* and/or extracting semantics from the user based on a *particular selected category*.” (emphasis in original)).

b. The IBM Research Report

The IBM Research Report was authored by two researchers from the IBM Research Division, Watson Research Center, in New York, and a third from the IBM Silicon Valley Laboratory in San Jose, California. The IBM Research Report focused on presenting “a new interactive interface for online product catalogs that effectively enables the shopper to navigate through the produce information space and analytically select suitable products” – that is, it focused on the same field as the patents-in-suit. *See* IBM Research Report at 1.

The IBM Research Report dedicated an entire section to reviewing then-existing methods for navigating the product space in online product catalogs. *Id.* at 5-8. Examples included (1) browsing products along a category hierarchy; (2) search based on keywords and/or parameters; (3) a table-based view which presents products side-by-side in one or more tables; (4) dialog-based product filtering, that is, engaging the shopper in a dialog to elicit preferences and requirements, and then compiling a list of responsive products; and (5) a “product scoring method” whereby a user would assign preferences to individual attributes that a computer would then use to return results. *Id.* The IBM Research Report identified problems with each of these prior art methods and included specific examples of user frustration with then-existing websites. *Id.* at 8-11 (CarsDirect.com and VerticalNet websites).

The solution proposed by the IBM researchers was dramatically different than the patents-in-suit. The IBM authors proposed a “Visual One-Page Catalog,” consisting of a color-coded display and manipulation of the user interface in a manner that was intended to ease the cognitive burden of comparing characteristics of many products drawn from many categories, with the resulting output looking like this:

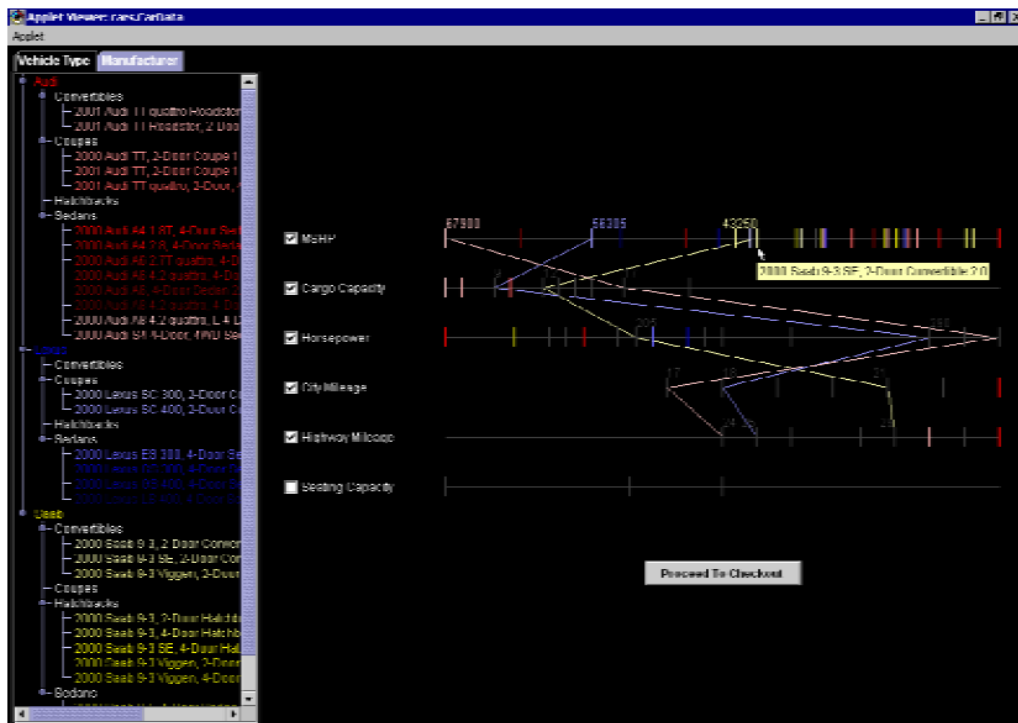


Figure 7. A screenshot of the Visual One-Page Catalog prototype

Id. at 11-15 and 25 (Fig. 7).

The output from the IBM prototype looks nothing like the result of using the methods of the patents-in-suit. Additionally, among other things, the IBM researchers did not propose any technique for obtaining a user confirmation of a presented category so as to focus and reduce the number of product characteristics to be considered. *See* Bridgeman Declaration at ¶ 18.

c. The GM-Lin Research Paper

The GM-Lin Research Paper was authored by two academic researchers from the Department of Computer Science of Bar-Ilan University in Israel, along with a researcher from the GM R&D Center in Michigan. *See* GM-Lin Research Paper at SEMANTIC_DEFS-002118. The research work underlying the Paper was supported by a grant from GM. *Id.*

As with the Silverman UPenn Paper and the IBM Research Report, the GM-Lin Research Paper identified problems with on-line stores and customers searching for desired products and contained some discussion of the existing art. *See Id.* at 1-2. These authors proposed a solution that would incorporate the user's browsing history and contemplated two profiles for each customer – the customer's history profile and his or her demographics and preference profile. *Id.* at 2120-22. Their proposed method contemplated an algorithm that would weight various factors, including the customer's "profile" information, and return potentially matching products accordingly:

Table 1. Summary of weights and notation used in OSGS

Customer's Weights	Notation
Preference weight	W_p
Keyword weight	W_k
Customer's x history weight	W_h^x
Neighbor weight according to history profile	W_{n_h}
Neighbor weight according to demographics and preference profile	W_{n_p}
Customer's x category weight	$W^x(category)$

Id. at 2123 (Table 1). As with the methods proposed by the other research papers discussed above, this methodology was very different than the methods of the patents-in-suit.

d. The 37signals Research Report

The 37signals Research Report appears to be a commercially-produced research report that evaluated 25 e-commerce search engines on the websites of numerous top e-retailers in the world,

including Amazon.com, the Apple Store, and BestBuy.com. This Report illustrates that these top e-retailers were handling search and retrieval of product catalog databases in a myriad of different ways as of early 2003, and all of these methods had problems. This Report starkly illustrates that search and retrieval of large product catalog databases is very different – and much more complex – compared to a customer walking into a store and dialoguing with a sales person.

Some of the examples of problems addressed in the 37signals Research Report precisely match the illustrations in the specification of the patents-in-suit that the inventors improved via their patented methods. For example, see the “Mixed Specifications”¹⁴ section of the Amazon.com page of the Report (SEMANTIC_DEFS-002294), where a search for “used Nikon digital camera” failed to find a match, and the same section of the Apple Store page (2295), where search phrases such as “4 megapixel digital camera” and “financial planning software” returned erroneous results.

2. Positions Taken in Claim Construction by the Defendants in the *Aldo* Case

One of the advancements of the patents-in-suit was the inventive methods’ particular use of “category descriptions” and “entity descriptions.” In the claim construction briefing in the *Aldo* case, the Defendants admitted that “category descriptions” and “entity descriptions” must be computer records in a particular format, which further supports Semantic Search’s positions on the motions to dismiss.

In the Defendants’ Responsive Claim Construction Brief in the *Aldo* case (Dkt. No. 117 in the *Aldo* case; Ex. I here), the *Aldo* Defendants admitted that an “entity description” must be computer data, and it must have a certain format, “comprising at least one value assigned to each

¹⁴ The Report describes “Mixed Specifications” as the user searching for combinations of attribute values linked to different attributes and/or words that may be found in category descriptions, *e.g.*, “Mixing gender and products (e.g. ‘Women’s sweaters’)” and “Mixing prices and products (e.g. ‘\$50 radio’).” *See* SEMANTIC_DEFS-002290. This is exactly like the problem described in the specification (1:61-2:3 in the ‘237 Patent), which the methods of the patents-in-suit address and solve.

item attribute of the two or more item attributes.” *See* Ex. I at pp. 6-7. Similarly, the *Aldo* Defendants admitted that a “category description” must be computer data, and they argued that each “category description” must have certain attributes, namely that it “specif[y] only one set of items.”¹⁵ *Id.* at p. 13.

These admissions by the *Aldo* Defendants support and solidify Semantic Search’s positions on the motions to dismiss that the methods of the patents-in-suit address a problem specifically arising in the realm of computer networks, operate only on computer records in a particular format, and have literally no application outside the computer environment.

3. Declaration of Richard Bridgeman

Mr. Bridgeman is a co-inventor on the patents-in-suit, and he is knowledgeable and well-qualified in the field of the patents-in-suit. *See* Bridgeman Declaration at ¶¶ 3-11 and Appendix A. Mr. Bridgeman’s declaration gives his sworn testimony discussing (a) the state of the art at the time of the invention and how the invention was an improvement; (b) the inventive concepts of the patents-in-suit; and (c) the fact that the inventions of the patents-in-suit do not preempt the field of e-commerce. Part of Mr. Bridgeman’s declaration specifically discusses some of the “prior art” research and academic papers that are discussed above. Rather than repeating Mr. Bridgeman’s Declaration here, Semantic Search incorporates the Bridgeman Declaration by reference as if set forth in full herein, and it particularly directs the Court to paragraphs 14-27 of the Bridgeman Declaration.

¹⁵ Semantic Search does not agree with this construction, but a characteristic of a “category description” is contained within the claims themselves, which indicate that at least some of the “category descriptions” must “compris[e] two or more item attributes.” This indicates that a “category description” has a particularized format.

4. U.S. Patent No. 9,639,878

On May 2, 2017, the USPTO issued U.S. Patent No. 9,639,878. The ‘878 Patent has the same inventors as the patents-in-suit, it has the same title as the patents-in-suit, and it shares a common specification with the patents-in-suit. The USPTO’s issuance of yet another presumptively valid patent in this patent family, with the USPTO having full knowledge of the current state of the law with respect to subject matter eligibility, after the *Alice* decision and after the key post-*Alice* opinions of the Federal Circuit regarding subject matter eligibility, provides further evidence that the subject matter of the patents-in-suit is indeed patent-eligible under 35 U.S.C. § 101.

F. The Dependent Claims Add Limitations That Even More Clearly Demonstrate That These Claims of the Patents-in-Suit Are Subject Matter Eligible

1. HTML-based GUI, accessible over a network (‘497 Patent – claims 7 & 8; ‘860 Patent – claims 7 & 8; ‘521 Patent – claims 7 & 8)

Dependent claims 7 of the ‘497, ‘860 and ‘521 Patents add the following limitation to the independent claims of these patents:¹⁶

7. The method of claim 1 wherein the graphical user interface page comprises a hypertext markup language (HTML)-based page accessible over a network coupling a client computer having the client computer screen to a server computer.

Dependent claims 7 and 8 are even more strongly subject matter eligible than Independent claims 1 of these three patents, because their tie to a particular technology, HTML, underscores the technical nature of the solutions of these claims of the patents-in-suit and provides an additional technical step that renders the methods even more technically efficient improvements over the

¹⁶ Dependent claim 8 of each of these three patents adds another limitation to claim 7, as follows: “The method of claim 7 wherein user input receiving steps are performed on the client computer and the search engine function is performed on the server computer.” Dependent claim 8 of each patent is subject matter eligible for the same reasons as Dependent claim 7.

prior art. The specific identification of HTML also ties Dependent claims 7 and 8 to the example “category description” in FIG. 5 of the patents-in-suit and to the example “entity description” in FIG. 6 of the patents-in-suit.

Semantic Search has consistently maintained that the “category descriptions” and “entity descriptions” of the patents-in-suit are required to be computer data records with particularized formats. The patented methods that require data in these particular formats are not the same as the Defendants’ oversimplified human salesperson-customer interaction; rather, they are technical solutions to deal with these types of computerized data records contained within a large, computerized search corpus.

FIG. 5 and FIG. 6 in the patents show an example “category description” and an example “entity description,” respectively, in a formal computer language. These examples codify a “category description” and an “entity description” using markup language tags. A person of skill in the art, at the relevant time, would have instantaneously recognized what is presented in FIG. 5 and FIG. 6 as a computer markup language such as HTML.¹⁷

The use of the same HTML technology for the graphical user interface page in Dependent claims 7 and 8 is no accident. This permits the server page to most readily and easily utilize the computer-data “category descriptions” and “entity descriptions” and incorporate their markup language tags into a GUI display delivered to the client computer. This step of delivering the interface to the client efficiently and effectively is a technical step even beyond the technical solutions of the independent claims. It shows that the independent claims are not representative

¹⁷ See Bridgeman Declaration at ¶¶27-28; *see also* Bridgeman Declaration at ¶ 14.

of Dependent claims 7 and 8, and that these claims are subject matter eligible even if the Court were to find the independent claims to be ineligible.¹⁸

**2. Mapping to a lowest level of category descriptions
(‘497 Patent – claim 5; ‘860 Patent – claim 5; ‘521 Patent – claim 5)**

Dependent claims 5 of the ‘497, ‘860 and ‘521 Patents add the following limitation to the independent claims of these patents:

5. The method of claim 1 wherein the mapping is performed to a lowest level of category descriptions below which no further levels of category descriptions are defined.

Dependent claims 5 are even more strongly subject matter eligible than Independent claims 1 of these three patents, because the methods they describe are even more particularized than those of the Independent claims.¹⁹ Moreover, these claims highlight the facts that (a) “category descriptions” require particularized computer data formats (*i.e.*, technical, solely applicable in the realm of computers); and (b) the claims require a technical computerized “scoring” and “mapping” step as part of the lexical search that maps the user’s selected input word list against entity descriptions (*e.g.*, the seventh element of claim 1 of the ‘497 Patent: “scoring at least some of the category descriptions, the scoring determined at least in part by mapping at least one word of the selected input word list against corresponding entity descriptions to form a plurality of scored category descriptions, wherein an occurrence of one or more lexical matches constitutes a mapping”).

¹⁸ And, at a very minimum, this demonstrates that the case cannot be dismissed as to these claims on a motion to dismiss, and that there is at least a genuine issue of material fact as to these claims if the motions to dismiss are converted to Rule 56 summary judgment motions. The same point applies equally to Semantic Search’s discussions of other Dependent claims below.

¹⁹ Contrary to Defendants’ assertions, Dependent claims 5 are not a mistake on the part of the patentee. Rather, Defendants’ arguments in this regard highlight a critical mistake that Defendants themselves are making in trying to mischaracterize the claims, which Semantic Search will deal with at an appropriate time, if and when any motion for summary judgment of invalidity under § 112 is filed.

These Dependent claims further illustrate how the Defendants’ human salesperson-customer analogy breaks down. There is no concept of “levels” of category descriptions in the Defendants’ analogy. There is no requirement or even any concept of “scoring” happening in the Defendants’ analogy, and not even any way that “scoring” or “mapping” as a part of “scoring” makes sense in that attempted analogy. There is no evidence that a human “scores” or “maps”; in fact, that would not even make sense. Likewise, there is no evidence that a human uses any “levels” of category descriptions at all, much less performs a “mapping” to a “lowest level” of category description.

For these reasons, the Independent claims are not representative of Dependent claims 5, and these claims are subject matter eligible even if the Court were to find the independent claims to be ineligible.

**3. Browsing area accessible at least upon exit of the search
(‘497 Patent – claim 10; ‘860 Patent – claim 10; ‘521 Patent – claim 9)**

Dependent claims 10 of the ‘497 and ‘860 Patents and Dependent claim 9 of the ‘521 Patent add the following limitation to the independent claims of these patents:

- 10/9. The method of claim 1 further comprising presenting, on the client computer screen, a browsing area displayed within the graphical user interface page, wherein the browsing area is accessible at least upon exit of the search by the user.

These Dependent claims are even more strongly subject matter eligible than Independent claims 1 of these three patents, because they add an additional step that constitutes an unconventional method that only makes sense in the technical computer environment. That step goes beyond the “abstract idea” proposed by the Defendants as well as going beyond the Defendants’ oversimplified human salesperson-customer analogy.

To help illustrate this claim in action, Semantic Search has attached a page from its P.R. 3-1 claim charts against Defendant SportsGiant as Exhibit K. Exhibit K illustrates the application

of claim 10 of the '860 Patent against Defendant SportsGiant's current website. As the Court can see, if the user hovers over the "Jerseys & Apparel" tab at the top of the page while logged in, the website generates a separate browsing area displayed within the GUI. This occurs separate and apart from the user-confirmed search methodology on that site that infringes Independent claim 1 of the '860 Patent (*i.e.*, "the browsing area is accessible at least upon exit of the search by the user"). This allows the user to shop for jerseys and apparel, separate from and in addition to other search processes that follow the patented method of Independent claim 1.

This is a technical solution by a computer or server that also performs the patented method, to present additional items to the buyer. The specification fully supports this additional step to the patented methods. *See* 6:67-7:2, 7:6-8, and 7:21-24. It is unconventional, and there is no reason why an additional browsing area is conventional or a necessary part of e-commerce.

For these reasons, the Independent claims are not representative of these Dependent claims, and these Dependent claims are subject matter eligible even if the Court were to find the independent claims to be ineligible.

CONCLUSION

For the reasons set forth herein, Plaintiff Semantic Search respectfully requests that the Court deny the Motions to Dismiss in their entirety, find that all claims of all of the patents-in-suit, U.S. Patent Nos. 8,793,237, 8,880,497, 9,069,860, and 9,378,521 are subject matter eligible under 35 U.S.C. § 101, and grant Semantic Search such other and further relief to which it is entitled.

Dated: October 20, 2017

Respectfully submitted,

/s/ Craig Tadlock

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CERTIFICATE OF SERVICE

The undersigned certifies that a copy of the foregoing was served on all parties who have appeared in this case on October 20, 2017, via the Court's CM/ECF system, pursuant to Local Rule CV-5(a)(3).

/s/ Craig Tadlock

Craig Tadlock